



## Operator Training Program Workshop Schedule

**Winter - Spring 2009**

Course #	Title	Location	Dates	Times	Maximum Enrollment	Fee
DEQ 14	Activated Sludge Process Control Part II	DEQ, Blue Ridge Regional Office, Roanoke	February 10 – 12, 2009	8:30 AM – 4:30 PM	20	\$150
DEQ 19	Basic Lab Skills for Wastewater Operators	DEQ, Valley Regional Office, Harrisonburg	February 24 - 25, 2009	8:30 AM – 4:30 PM	16	\$100
DEQ 3	DO/BOD Wastewater Sampling and Testing	DEQ, Piedmont Regional Office, Glen Allen	March 10 – 11, 2009	8:30 AM – 4:30 PM	16	\$100
DEQ 18	Introduction to BNR (Biological Nutrient Removal)	Henrico County Water Reclamation Facility	March 17 – 18, 2009	8:30 AM – 4:30 PM	20	\$100
DEQ 13	Activated Sludge Process Control Part I	Opequon Water Reclamation Facility, Winchester	March 24 – 26, 2009	8:30 AM – 4:30 PM	16	\$150
DEQ 18	Introduction to BNR (Biological Nutrient Removal)	Spotsylvania County, Massaponnax WWTP	April 8 – 9, 2009	8:30 AM – 4:30 PM	16	\$100
DEQ 12	Small Wastewater Treatment Plant Sampling and Testing	DEQ, Northern Virginia Regional Office, Woodbridge	April 14 – 15, 2009	8:30 AM – 4:30 PM	16	\$100
DEQ 19	Basic Lab Skills for Wastewater Operators	Wolf Creek Water Reclamation Facility, Abingdon	May 12 - 13, 2009	8:30 AM – 4:30 PM	16	\$100

**Workshop Descriptions on Back of Page**

<b>DEQ - 3</b>	<b>Wastewater Sampling &amp; Testing, D.O. &amp; BOD Workshop</b>	<b>Training Credits: 1.0</b>	<b>Registration Fee: \$100.00</b>
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This two day workshop consists of a combination of lecture, demonstration and hands on laboratory exercises. During the program participants will learn to: (a) collect valid, representative samples for dissolved oxygen (D.O.) and biochemical oxygen demand (BOD) testing; (b) perform the Modified Winkler and D.O. Meter and Probe Methods for determination of dissolved oxygen; (c) perform BOD sample pretreatment procedures for pH adjustment, and residual chlorine removal; (d) select an appropriate sample dilution range based on anticipated BOD levels; (e) perform seeded and unseeded BOD procedures; (f) select valid dilutions; (g) calculate accurate test results for seeded and unseeded BOD; (h) perform glucose-glutamic acid procedure; and (i) evaluate test data for toxicity indicators. The program will also cover sample preservation methods, maximum allowable holding times, recordkeeping requirements and quality assurance/quality control procedures for the subject test procedures. The carbonaceous BOD (CBOD) test procedure may also be discussed based on student interest and time availability.

<b>DEQ - 12</b>	<b>Wastewater Sampling &amp; Testing For Small Treatment Plants</b>	<b>Training Credits: 1.0</b>	<b>Registration Fee: \$100.00</b>
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This two day workshop will address topics of specific interest to small (<40,000 gpd) treatment facility owners and operators. Hands on activities will focus on requirements and procedures for on-site effluent testing and will include: (a) performing the dissolved oxygen (D.O.) test using a D.O. meter; (b) performing the total residual chlorine test using a direct readout DPD colorimetric procedure; (c) performing the pH test using a pH meter and electrode(s). The program will also include discussions of determining composite sample volumes, sample collection and preservation methods for biochemical oxygen demand, suspended solids, nutrient and bacteriological samples, recordkeeping, quality assurance/quality control requirements, completion of the discharge monitoring report, selection of a contract laboratory, and sources of assistance. The program includes lecture, demonstration and hands -on laboratory exercises

<b>DEQ – 13</b>	<b>Activated Sludge Process Control, Part I</b>	<b>Training Credits: 2.0</b>	<b>Registration Fee: \$150.00</b>
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This three day workshop provides the knowledge and skills required to monitor and adjust the operation of an activated sludge treatment plant. The program will focus on the basic concepts, process observations, basic process control testing, including settled sludge volume (settleability) testing, microscopic examination, dissolved oxygen and alkalinity, recordkeeping and data interpretation. The program's hands on activities will include observation of an activated sludge system, collection and analysis of process control samples, and data analysis. Managers, operators and operator trainees of activated sludge treatment systems will find this program very helpful.

<b>DEQ – 14</b>	<b>Activated Sludge Process Control, Part II</b>	<b>Training Credits: 2.0</b>	<b>Registration Fee: \$150.00</b>
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This three day workshop provides the knowledge and skills required to evaluate and control the operation of an activated sludge treatment plant. The program will focus on basic and advanced process control strategies, process control calculations, data interpretation and process troubleshooting. The program's hands on activities will include analysis of operational data, performing process control calculations; using calculated data to adjust operating levels and troubleshooting activated sludge treatment process performance problems. Managers, operators and operator trainees of activated sludge treatment systems will find this program very helpful.

<b>DEQ – 18</b>	<b>Introduction to BNR (Biological Nutrient Removal)</b>	<b>Training Credits: 1.2</b>	<b>Registration Fee: \$100.00</b>
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This two day workshop provides an introduction to the principles involved in biological nutrient removal. The focus of the program will be the suspended growth (activated sludge) BNR processes. If you operate or manage a treatment system which includes biological nutrient removal or will be required to implement biological nutrient removal, this program will be helpful. The program will discuss the basic concepts associated with biological nutrient removal (nitrification, denitrification and biological phosphorus removal). It will identify performance factors, provide typical operating ranges for many of these factors and review various design and operational configurations currently being used for BNR. Based on availability, the program will include one or more site visits to facilities currently achieving full or partial BNR.

<b>DEQ – 19</b>	<b>Basic Lab Skills for Wastewater Operators</b>	<b>Training Credits: 1.0</b>	<b>Registration Fee: \$100.00</b>
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This two day workshop provides hands on instruction in the basic skills required to accurately perform wastewater related sampling and testing. If you are responsible for conducting your facility's sampling and testing, this program will be extremely beneficial. The program covers lab water sources, equipment selection, equipment and glassware cleaning and storage, and the collection and preservation of representative samples. The program also includes hands-on experience in using glassware and lab instruments to dilute samples and chemicals and to prepare standards. It will also present the basic quality assurance considerations required at any facility performing permit related testing. The QA discussion will include the use of blanks, replicates, split samples and performance standards, procedures for the systematic verification of instrument accuracy, initial demonstration of competency (IDC) requirements and other quality assurance related topics. The program will include lectures, demonstrations and hands on laboratory activities.

# Operator Training Program Workshops

## General Information

### **Registration:**

***Only complete applications (registration form & payment) submitted to the Department's Office of Finance at the address shown on the form will be considered.*** Applicants are accepted on a "first come - first served" basis. Due to popularity of the programs no "walk-in" registrations can be accepted. To register for these programs complete the registration form, attach the appropriate payment and send to the address shown on the form. You will receive notification of your acceptance and an information package containing directions and other pertinent information.

### **Fees:**

Fees are based on the length of the program and the complexity of the topic area covered. Fees for each program are listed on the schedule. Fees must be submitted in the form of check or money order made payable to the Department of Environmental Quality prior to the start of the program. No purchase orders or credit cards can be accepted. State Agencies should contact the Department's Finance Office (804 698-4162) for IAT procedures.

### **Workshop Approval:**

Unless otherwise noted, these courses are approved by the Virginia Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals. Approved programs can, when applicable, be used as substitution for required operational experience.

### **Withdrawal, Substitution & Refund Policy:**

Registrants who must withdraw from the workshop should notify the Department by phone, mail or email as soon as possible. Substitutions are permitted anytime prior to the start of class.

***Note: Registrants who withdraw from the program at least 5 business days prior to the start of the program will receive a full refund. Withdrawals made after this time will not be eligible for a refund.***

### **Cancellation:**

The Department reserves the right to cancel any program when there are insufficient registrations. People who register will be notified of the cancellation and receive a refund of the registration fee.

### **Breaks and Lunches:**

The registration fee does not include break refreshments or lunch.

### **Additional Information:**

Contact the Operator Training Program staff:

Jason Spicer  
Phone: 804 698-4143  
email: [jtspicer@deq.virginia.gov](mailto:jtspicer@deq.virginia.gov)

or

Wayne Staples  
Phone: 804 698-4106  
email: [dwstaples@deq.virginia.gov](mailto:dwstaples@deq.virginia.gov)

**Course Location Information on Back of Page**

## **Course Locations:**

### DEQ – Blue Ridge Regional Office (Roanoke)

The Blue Ridge Regional Office (Roanoke) of the Department of Environmental Quality is located at 3019 Peters Creek Road in Roanoke, Virginia 24019. Persons registering for workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).

### DEQ – Valley Regional Office (VRO)

The Valley Regional Office of the Department of Environmental Quality is located at 4411 Early Road in Harrisonburg, Virginia 22801. Persons registering for workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).

### DEQ - Piedmont Regional Office (PRO)

The Piedmont Regional Office of the Department of Environmental Quality is located at 4949A Cox Road, Glen Allen, Virginia 23060. Persons registering for workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).

### Henrico County Water Reclamation Facility

The Henrico County Water Reclamation Facility is located in Varina, Virginia. Persons registering for the workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).

### Opequon Water Reclamation Facility

The Opequon Water Reclamation Facility is located in Winchester, Virginia. Persons registering for workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).

### Spotsylvania County, Massaponax Wastewater Treatment Facility

The Spotsylvania County, Massaponax Wastewater Treatment Facility is located in Fredericksburg, Virginia. Persons registering for workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).

### Wolf Creek Water Reclamation Facility

The Wolf Creek Water Reclamation Facility is located in Abingdon, Virginia. Persons registering for workshops at this location will receive directions and other pertinent information (i.e. nearby lodging and restaurants).



# DEQ

## Operator Training Program

### Workshop Registration Form

(If more than one person from your facility is planning to attend, please use a separate form for each person registering)

**Please check the workshop(s) you are registering for:**

- |  |                                 |
|--|---------------------------------|
| _____ <b>DEQ 14 Activated Sludge Process Control, Part II</b><br>DEQ, Blue Ridge Regional Office, Roanoke                | February 10 – 12, 2009<br>\$150 |
| _____ <b>DEQ 19 Basic Lab Skills for Wastewater Operators</b><br>DEQ, Valley Regional Office, Harrisonburg               | February 24 – 25, 2009<br>\$100 |
| _____ <b>DEQ 3 DO/BOD, Wastewater Sampling and Testing</b><br>DEQ, Piedmont Regional Office, Glen Allen                  | March 10 – 11, 2009<br>\$100    |
| _____ <b>DEQ 18 Introduction to Biological Nutrient Removal</b><br>Henrico County Water Reclamation Facility, Varina     | March 17 – 18, 2009<br>\$100    |
| _____ <b>DEQ 13 Activated Sludge Process Control, Part I</b><br>Opequon Water Reclamation Facility, Winchester           | March 24 – 26, 2009<br>\$150    |
| _____ <b>DEQ 18 Introduction to Biological Nutrient Removal</b><br>Spotsylvania County, Massaponnax WWTF, Fredericksburg | April 8 – 9, 2009<br>\$100      |
| _____ <b>DEQ 12 Small Wastewater Plant Sampling and Testing</b><br>DEQ, Northern Virginia Regional Office, Woodbridge    | April 14 – 15, 2009<br>\$100    |
| _____ <b>DEQ 19 Basic Lab Skills for Wastewater Operators</b><br>Wolf Creek Water Reclamation Facility, Abingdon         | May 12 – 13, 2009<br>\$100      |

**Fill Out Registration Form on Back of Page**

## **Registration Form**

### **Registrant Information:**

Name: \_\_\_\_\_

Mailing Address:

Street/PO Box: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Daytime Phone: (\_\_\_\_) - \_\_\_\_ - \_\_\_\_\_ Daytime Fax: (\_\_\_\_) - \_\_\_\_ - \_\_\_\_\_

Email: \_\_\_\_\_

### **Employer Information:**

Employer: \_\_\_\_\_

Supervisor: \_\_\_\_\_

Daytime Phone: (\_\_\_\_) - \_\_\_\_ - \_\_\_\_\_ Daytime Fax: (\_\_\_\_) - \_\_\_\_ - \_\_\_\_\_

Email: \_\_\_\_\_

Mail registration form & payment to:

Office of Finance  
Department of Environment Quality  
PO Box 1104  
Richmond, VA 23218

Total payment enclosed \$ \_\_\_\_\_